UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

Note to Reader

Background: As part of its effort to involve the public in the implementation of the Food Quality Protection Act of 1996 (FQPA), which is designed to ensure that the United States continues to have the safest and most abundant food supply. EPA is undertaking an effort to open public dockets on the organophosphate pesticides. These dockets will make available to all interested parties documents that were developed as part of the U.S. Environmental Protection Agency's process for making reregistration eligibility decisions and tolerance reassessments consistent with FQPA. The dockets include preliminary health assessments and, where available, ecological risk assessments conducted by EPA, rebuttals or corrections to the risk assessments submitted by chemical registrants, and the Agency's response to the registrants' submissions.

The analyses contained in this docket are preliminary in nature and represent the information available to EPA at the time they were prepared. Additional information may have been submitted to EPA which has not yet been incorporated into these analyses, and registrants or others may be developing relevant information. It's common and appropriate that new information and analyses will be used to revise and refine the evaluations contained in these dockets to make them more comprehensive and realistic. The Agency cautions against premature conclusions based on these preliminary assessments and against any use of information contained in these documents out of their full context. Throughout this process, If unacceptable risks are identified, EPA will act to reduce or eliminate the risks.

There is a 60 day comment period in which the public and all interested parties are invited to submit comments on the information in this docket. Comments should directly relate to this organophosphate and to the information and issues available in the information docket. Once the comment period closes, EPA will review all comments and revise the risk assessments, as necessary.

These preliminary risk assessments represent an early stage in the process by which EPA is evaluating the regulatory requirements applicable to existing pesticides. Through this opportunity for notice and comment, the Agency hopes to advance the openness and scientific soundness underpinning its decisions. This process is designed to assure that America continues to enjoy the safest and most abundant food supply. Through implementation of EPA's tolerance reassessment program under the Food Quality Protection Act, the food supply will become even safer. Leading health experts recommend that all people eat a wide variety of foods, including at least five servings of fruits and vegetables a day.

Note: This sheet is provided to help the reader understand how refined and developed the pesticide file is as of the date prepared, what if any changes have occurred recently, and what new information, if any, is expected to be included in the analysis before decisions are made. **It is not meant to be a summary of all current information regarding the chemical.** Rather, the sheet provides some context to better understand the substantive material in the docket (RED chapters, registrant rebuttals, Agency responses to rebuttals, etc.) for this pesticide.

Further, in some cases, differences may be noted between the RED chapters and the Agency's comprehensive reports on the hazard identification information and safety factors for all organophosphates. In these cases, information in the comprehensive reports is the most current and will, barring the submission of more data that the Agency finds useful, be used in the risk assessments.

Jack E. Housenger, Acting Director
Special Review and Reregistration Division

HED DOC. NO. 013736

September 13, 1999

MEMORANDUM

SUBJECT: ***PHOSALONE*** **-** Report of the FQPA Safety Factor Committee

FROM: Brenda Tarplee, Executive Secretary
FQPA Safety Factor Committee
Health Effects Division (7509C)

THROUGH: Ed Zager, Chairman
FQPA Safety Factor Committee
Health Effects Division (7509C)

TO: Kit Farwell, Risk Assessor
Reregistration Branch 1
Health Effects Division (7509C)

PC Code: 097701

The FQPA Safety Factor Committee met on August 16, 1999 to evaluate the hazard and exposure data for phosalone and recommended that the FQPA Safety Factor (as required by Food Quality Protection Act of August 3, 1996) be removed (1x) in assessing the risk posed by this chemical.

I. HAZARD ASSESSMENT

(*Memorandum:* K. Farwell to W. Phang dated August 12, 1999)

A. Adequacy of the Toxicology Database

The toxicology database for phosalone is adequate according to the Subdivision F Guideline requirements for a food-use chemical.

B. Determination of Susceptibility

The data provided no indication of increased susceptibility in rats from *in utero* and/or post natal exposure to phosalone. In the prenatal developmental toxicity study in rats and the two-generation reproduction study in rats, effects in the fetuses / offspring were observed at doses higher than those producing maternal / parental effects.

In the prenatal developmental toxicity studies in rabbits, the developmental NOAEL (1 mg/kg/day) was lower than the maternal NOAEL (10 mg/kg/day) indicating an apparent quantitative increase in fetal sensitivity in rabbits following *in utero* exposures to phosalone. However, there were two reasons for considering that this was not a true quantitative increase in fetal sensitivity:

> First, the selected endpoint is a very conservative indicator of toxicity because it is based on total resorptions and is not a litter effect. Mean resorptions were increased but not with statistical significance. Total resorptions achieved statistical significance and were primarily attributed to 1 dam with total resorptions in the mid-dose group and 2 dams with total resorptions in the high-dose group.
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> Secondly, cholinesterase activity was not determined in this study. Considering the severity of the maternal clinical signs (labored breathing, abdominal cramps, extension spasms, prostration) occurring at 20 mg/kg/day, it is likely that significant cholinesterase inhibition was occurring at this dose. Based upon information from other studies (e.g. the acute neurotoxicity study in rats in which plasma cholinesterase inhibition was observed after a single oral dose of 10 mg/kg and the 2-generation study in which repeated dietary doses of 0.086 mg/kg/day resulted in red blood cell cholinesterase inhibition), it is presumed that cholinesterase activity was probably also inhibited in the maternal rabbits at 10 mg/kg/day which could have caused the observed fetal effects (increases in total resorptions). Therefore, it was considered unlikely that there was a true quantitative increase in fetal sensitivity.

C. Requirement for a Developmental Neurotoxicity Study

The HIARC determined that a developmental neurotoxicity study with phosalone in rats is not triggered using the current criteria.

II. EXPOSURE ASSESSMENTS

A. Dietary (Food) Exposure Considerations

(*Correspondence:* K. Farwell to B. Tarplee dated August 12, 1999)

Phosalone is an organophosphate pesticide. All U.S. uses were withdrawn in 1989, however, use on the following crops is being supported for import purposes only: almond, apples, apricots, cherries, grapes, peaches, pears, and plums/prunes. Many of these commodities are considered to be highly consumed by infants and children. It is assumed that the use of phosalone will occur late in the growing season resulting in significant residues on fruits/nuts. Tolerances are currently established for residues of phosalone, *per se*, on the crops listed above at levels of 10 or 15 ppm (40 CFR 180.263). Of the crops being supported for importation, only apples and grapes have Codex MRLs.

Residues of phosalone are mostly surface residues and, for the most part, will be removed during the preparation process (e.g., washing, peeling, etc.).

Data sources for phosalone include residue data from field trial studies for all registered crops and monitoring data from the USDA Pesticide Data Program for apples, grapes, and peaches. From 1994-96, detectable residues were found in only 5 of 1171 samples collected; residues were present at 0.01-0.22 ppm (LOQ = 0.05 ppm). Residue levels of phosalone from field trial data typically ranged from 0.2-2 ppm (<0.02 ppm in almonds). Data on percent crop imported has also been provided from BEAD.

Dietary food exposure analyses will be performed to estimate the acute and chronic dietary risk for phosalone using the Dietary Exposure Evaluation Model (DEEM). DEEM combines pesticide residue data with food consumption data to estimate dietary (food only) exposure. The chronic and acute analyses could be refined using anticipated residue estimates based on available monitoring data and field trials as well as percent crop imported information. The result would be a more realistic estimate of the dietary exposure expected from the application of phosalone to food commodities.

B. Dietary (Drinking Water) Exposure Considerations

(*Correspondence:* K. Farwell to B. Tarplee, dated August 12, 1999.)

A drinking water exposure assessment was not performed for phosalone since there are no domestic uses for this pesticide and therefore, no potential exists for ground and/or surface water contamination.

C. Residential Exposure Considerations

(*Correspondence:* K. Farwell to B. Tarplee, dated August 12, 1999)

There are currently no registered residential uses for phosalone.

III. SAFETY FACTOR RECOMMENDATION AND RATIONALE

A. Recommendation of the Factor

The Committee recommended that the FQPA safety factor for protection of infants and children (as required by FQPA) be **removed (1x).**

B. Rationale for Removing the FQPA Safety Factor

The Committee concluded that the safety factor could be removed for phosalone because:

1. The toxicology database is complete for FQPA assessment;

2. The HIARC concluded that the toxicity data provide no indication of qualitative or quantitative increased susceptibility of young rats or rabbits to phosalone;

3. The HIARC determined that a developmental neurotoxicity study is not triggered using the current criteria;

4. Adequate actual data, surrogate data, and/or modeling outputs are available to satisfactorily assess dietary exposure (since the reregistration only supports import tolerances, no drinking water or residential assessment is required for phosalone).